



RESTRICTED CIRCULATION

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AGRICULTURAL MEMORANDUM NO 766

Gastro-intestinal nematode infection in sheep and cattle: a predictive technique applied to experiments in SE England, by J R Starr

Introduction

Agricultural Memorandum No 765 describes the epidemiology of *Ostertagia* infection in domestic ruminants and presents an objective technique for predicting the onset of the peak larval count and hence the date of maximum pasture contamination. Based on experimental data from Cockle Park, Northumberland by Boag and Thomas the technique uses rainfall data from Acklington and Tynemouth and assumes that the pasture was first stocked on about 15 April each year.

This memorandum presents the application of the technique to experiments by Ollerenshaw on pastures near Rye, Sussex, using rainfall data from Manston, Kent, some 30 km NE of Rye.

The Rye data

Experimental data on nematode larval counts on pasture were obtained by Ollerenshaw from several farms within four miles radius of Rye from 1972 onwards. Sampling, by a different technique from that of Boag and Thomas, tended to be at two- to three-week intervals and there was uncertainty as to the date when the pastures were first stocked each year. The observed peak larval count is thus shown in table 1 as occurring within an interval rather than on a particular date. Calculations using a 'critical index' of 440 and warning indices of 380 and 350 are based on 12 hourly rainfall data from Manston.

Within the experimental limitations and the errors due to non-representativeness of the rainfall data, the agreement is satisfactory.

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
Bracknell

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Table 1

Peak Nematode Laval Count

Rainfall data from Manston

Period	1972	1973	1974	1975	Left-hand column presents sub-totals of WS units in the period stated. Right-hand column is the cumulative total from 16 Apl, the 16 April to 31 May total being reduced by 40%
16-30 Apl	45	54	13	43	
1-31 May	X0.6 { 106 91	117 103	46 35	109 79	
1-30 Jun	109 200	87 190	137 172	40 179	
1-15 Jly	71 271	38 228	112 284	56 175	
16-31	67 338	50 278	47 331	52 227	
1-5 Aug	52 390	22 300	40 371	0	
6-10	0	24 324	60 431	11 238	
11-15	16 406	0	34 465	25 263	
16-20	0	0	37	5 268	
21-25	0	0		29 297	
26-31	0	0		0	
1-5 Sept	0	0		4 301	
6-10	34 440	0		0	
11-15		0		66 367	
16-20		44 368		12 379	
21-25		89 457		18 397	
26-30				88 485	
Observed peak count period	15 Aug-15 Sept	19 Sept-11 Oct	6-22 Aug	After 18 Sept	
Estimated Date with 440	10 Sept	23 Sept	12 Aug	29 Sept	
Warning with 380	2 Aug	21 Sept	8 Aug	25 Sept	
Warning with 350	1 Aug	19 Sept	4 Aug	14 Sept	